

**OBSERVATIONS ON THE OSTEOLOGY AND
NATURAL HISTORY OF THE AGAMID LIZARD
*CTENOPHORUS CLAYI***

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Ctenophorus clayi (Storr 1966) is a small agamid (maximum SVL : 54 mm) (Figure 1) inhabiting low shrubland on sandy substrates (dunes and sandplains) in two apparently disjunct parts of Australia: central-eastern Western Australia and adjacent parts of the Northern Territory, and the area west and south-west of Exmouth Gulf (Storr 1966; Storr and Hanlon 1980; Storr and Harold 1984, and Storr *et al.* 1983).

The following new observations for the species are based on the nineteen specimens in the Australian Museum, four of which come from the central part of the range and the remainder from the Exmouth Gulf area.

Fifteen specimens were x-rayed for osteological data and examined for reproductive condition. The number of presacral vertebrae was 22-24 (mode = 23, \bar{x} = 22.8) and the number of postsacral vertebrae 39-44 (\bar{x} = 42.3, N = 12). In a survey of the family, Moody (1980) noted that "the majority of agamids have 21 or 22 [presacral] vertebrae" and a large number have about 40 postsacral vertebrae. Thus, compared to other agamids *Ctenophorus clayi* appears to have a slightly elevated number of presacrals but the common number of postsacrals.



Figure 1. *Ctenophorus clayi* from approximately 82 km S of Exmouth.

The number of phalanges in the manus/pes was 2(N = 23, counting both sides). 3(27). 4(26). 5(26). 3(27)/2(10). 3(8). 4(12). 5(29). 3(28)-4(2). The most common phalangeal formula for the species therefore is 2.3.4.5.3/2.3.4.5.3 which represents a loss of one phalange in the fifth toe of the pes. The only deviation noted is one specimen with four phalanges in the fifth toe of pes on both sides giving it the primitive agamid phalangeal formula of 2.3.4.5.3/2.3.4.5.4. This may represent a reacquisition of the primitive condition in this one specimen. The only other Australian agamids known to have lost phalanges in the fifth toe of the pes as the modal or uniform condition are *Tympanocryptis* (sensu Storr *et al.* 1983 less *adelaidensis*, *aurita* and *chapmani*) and *Moloch* (pers. obs.).

Two females in the collection carry enlarged ovarian follicles, one (AM R 59925) of SVL 42 mm has two and the other (AM R 86510) of SVL 48 mm has four; the former was collected at Maryvale, N.T. in November 1976, the latter 2.5 km SE of Condun Well, W.A. 28 January 1978.

In the Exmouth Gulf region specimens have been found on rolling red sandplain with low shrubs (Figure 2), where they have been first seen sitting on small rocks and on open ground between shrubs. When pursued they either run short distances into the base of shrubs or, if the ground surface is hot, ascend small open shrubs to a height of about 30 cm. In captivity one individual dug a short burrow with two entrances which it often back-plugged when inside. In digging, the lizard sometimes used the two legs on the same side simultaneously. Captive individuals (N = 3) also often ascended a small stump to get closer to the light/heat source.



Figure 2. Habitat of *Ctenophorus clayi* approximately 82 km S of Exmouth.

In life, certain adults (sex not recorded) had an orange wash on the posterior throat and a salmon wash on the lateral parts of the belly. The tongue and lining of the mouth was pale pink in colour.

Specimens examined. Australian Museum R 9541: Finck River, 80 mls S Alice Springs, N.T.; R 26413-14: Ayers Rock, N.T.; R 59925: Maryvale, N.T.; R 81296: ca 65 km S of Exmouth, W.A.; R 81404-06: 50±20 km S of Exmouth, W.A.; R 86509-12, 107497: 2.5 km SE of Condon Well, W.A.; R 101596: just W of Bullara homestead, W.A.; R 101634-35: ca 64 km S of Exmouth, W.A.; R 118510-11, 121004: 8/9 km S of Exmouth by Road, W.A.

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THE BROODING SPIDER CRAB *PARANAXIA SERPULIFERA* (GUÉRIN) FROM COCKBURN SOUND, WESTERN AUSTRALIA

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INTRODUCTION

Most decapod crustaceans, and virtually all true (brachyuran) crabs, display metamorphic (several stages) development (Barnes 1974: 606; Williamson 1982: 47). With few exceptions, brachyuran eggs hatch as planktonic zoea larvae, passing through several (usually three to six) stages before transforming into post-larvae, or megalopas. The megalopa larvae develop into juvenile crabs.

In most crabs, the male transfers sperm via modified pleopods (swimmerets) to seminal receptacles in the female during mating. The female lays the internally fertilised eggs sometime later and attaches them to setae on her pleopods. The eggs are carried in a mass between the abdomen and thorax for varying periods of time until hatching when the zoea are released.

Crabs of the family Majidae, commonly known as spider crabs, are widespread in intertidal, shallow subtidal and deep offshore waters around Australia. Many members of this family characteristically